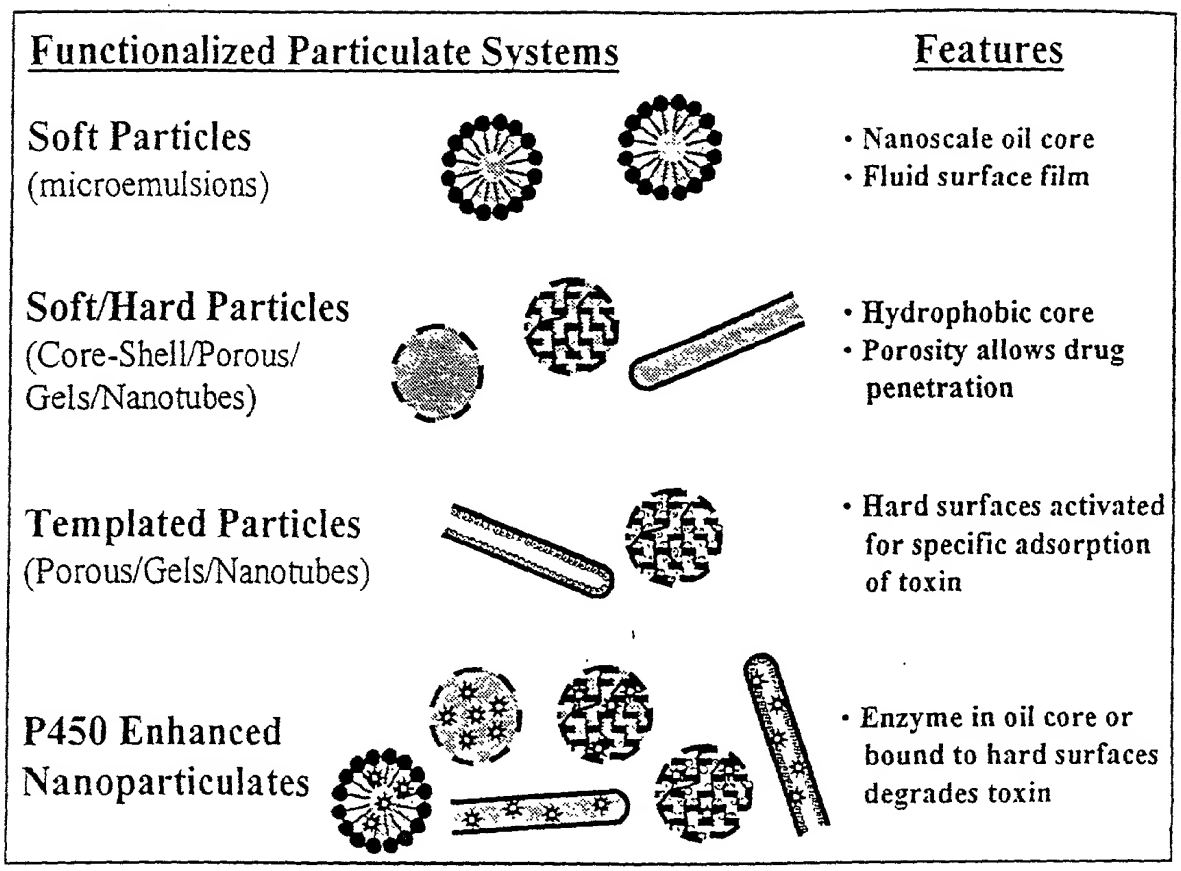
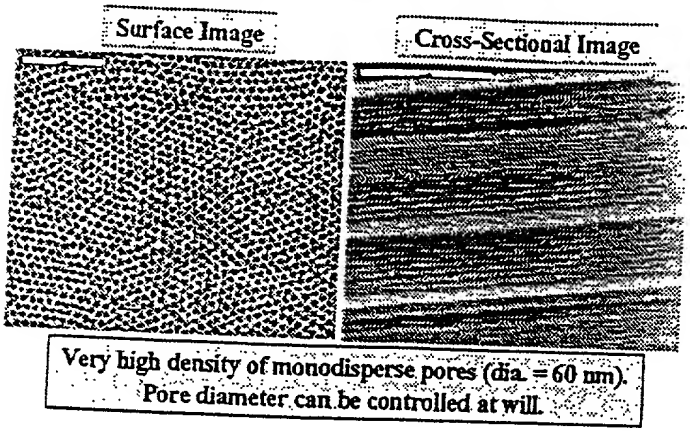

Functionalized Particulate Systems
Features
Soft Particles
(microemulsions)
• Nanoscale oil core
• Fluid surface film
Soft/Hard Particles
(Core-Shell/Porous/
Gels/Nanotubes)
• Hydrophobic core
• Porosity allows drug penetration
Templated Particles
(Porous/Gels/Nanotubes)
• Hard surfaces activated for specific adsorption of toxin
P450 Enhanced
Nanoparticulates
• Enzyme in oil core or bound to hard surfaces degrades toxin

FIGURE 1.

Scanning Electron Micrographs of a Microporous Alumina Template Membrane Prepared in the Martin Lab




Scanning Electron Micrograph of the Surface of the Alumina Template Membrane Used

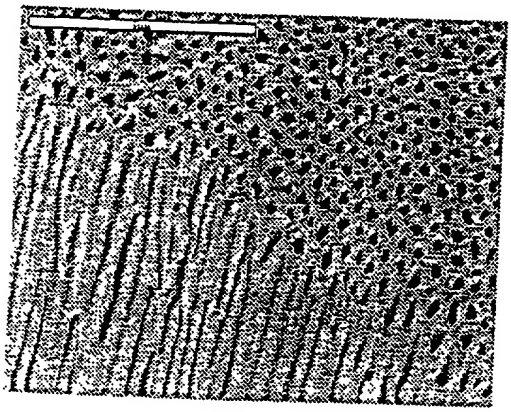


FIGURE 3.

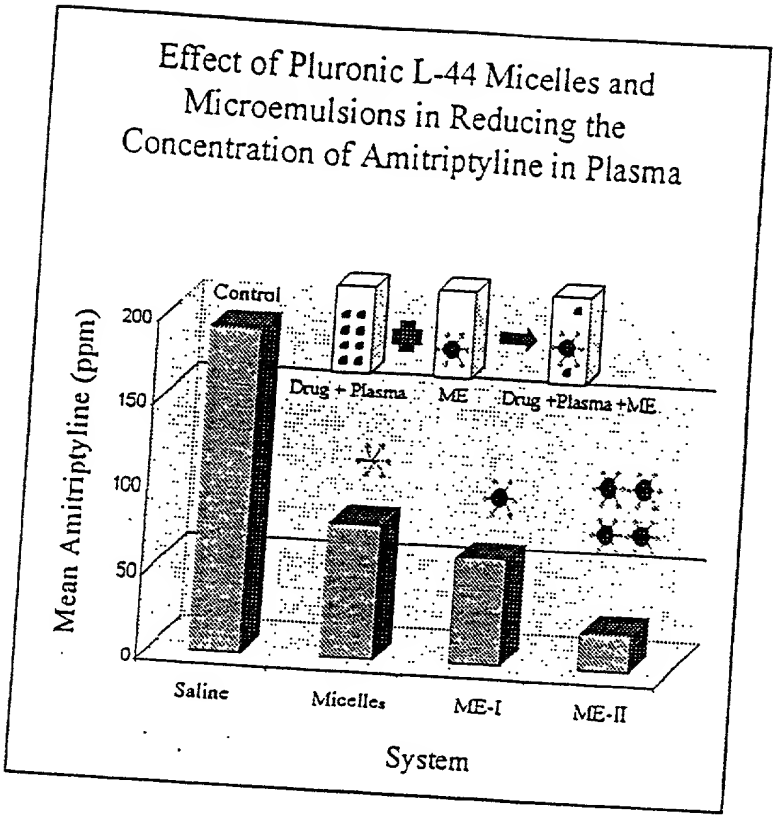

Effect of Pluronic L-44 Micelles and Microemulsions in Reducing the Concentration of Amitriptyline in Plasma
Mean Amitriptyline (ppm)
200
150
100
50
0
Control
Drug + Plasma
ME
Drug +Plasma +ME
Saline
Micelles
ME-I
ME-II
System

FIGURE 2.

**Solution Absorption Spectra After Dispersion of First and Second Batch of $SiO_2/C_{18}$ Tubules**

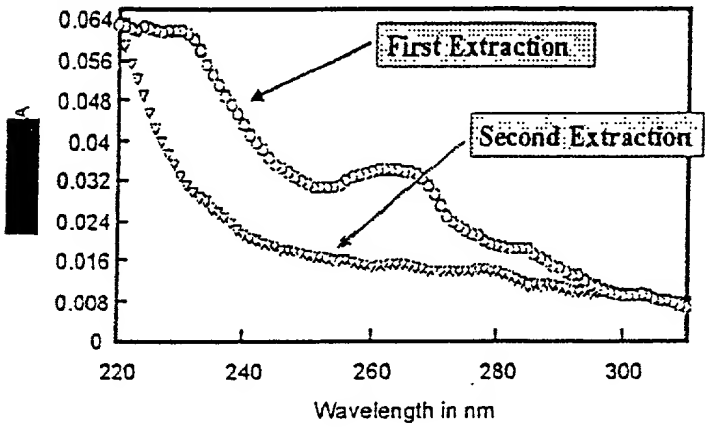



FIGURE. 5.

Extraction of 7,8-Benzoquinoline (BQ) from Aqueous Solution the by Suspended Nanotubules

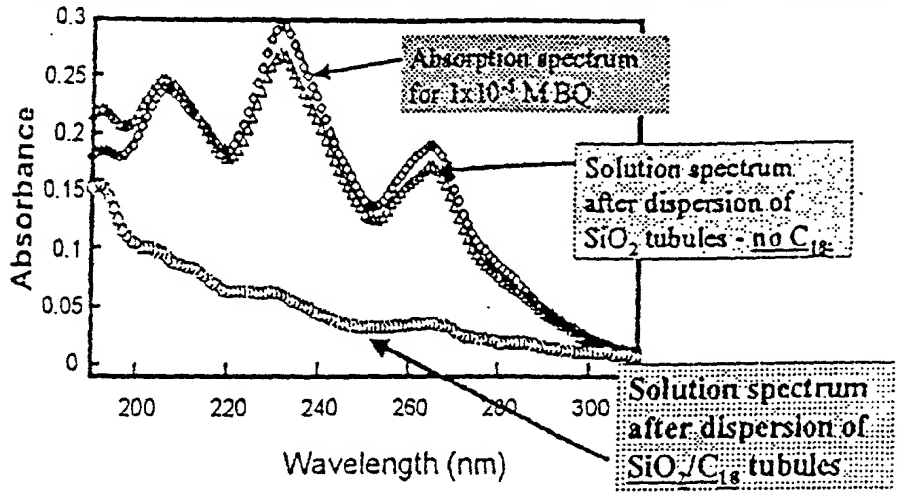



FIGURE 4.

Absorbance after Immersion and Removal of the $Al_2O_3/SiO_2$/GOD Membrane

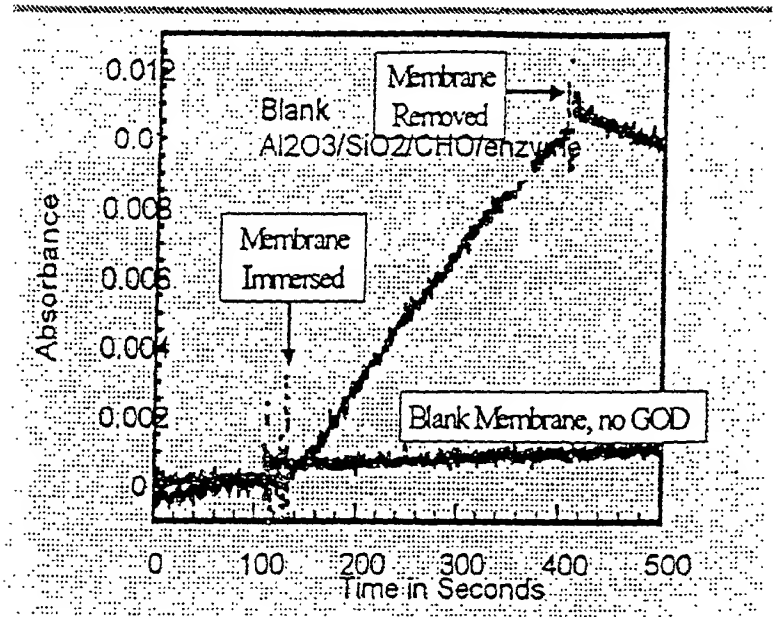



FIGURE 6.

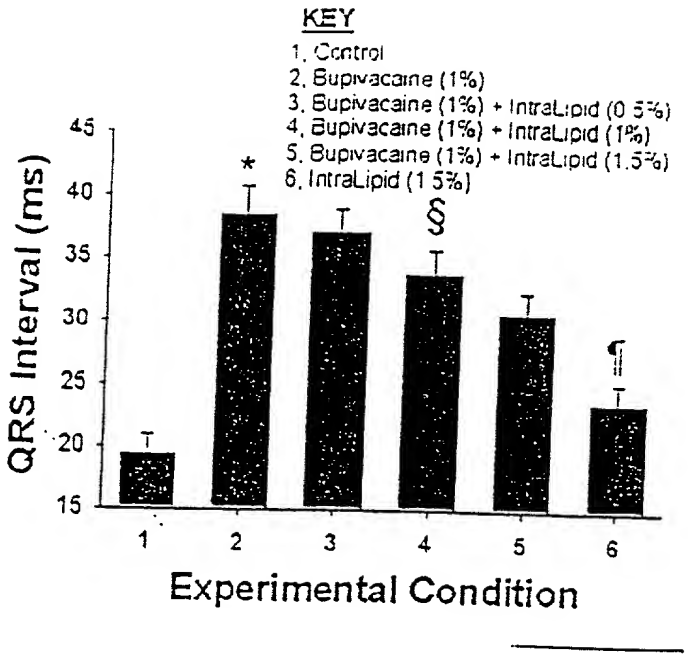

KEY
1. Control
2. Bupivacaine (1%)
3. Bupivacaine (1%) + IntraLipid (0.5%)
4. Bupivacaine (1%) + IntraLipid (1%)
5. Bupivacaine (1%) + IntraLipid (1.5%)
6. IntraLipid (1.5%)
QRS Interval (ms)
45
40
35
30
25
20
15
*
§
¶
1
2
3
4
5
6
Experimental Condition

FIGURE 8.

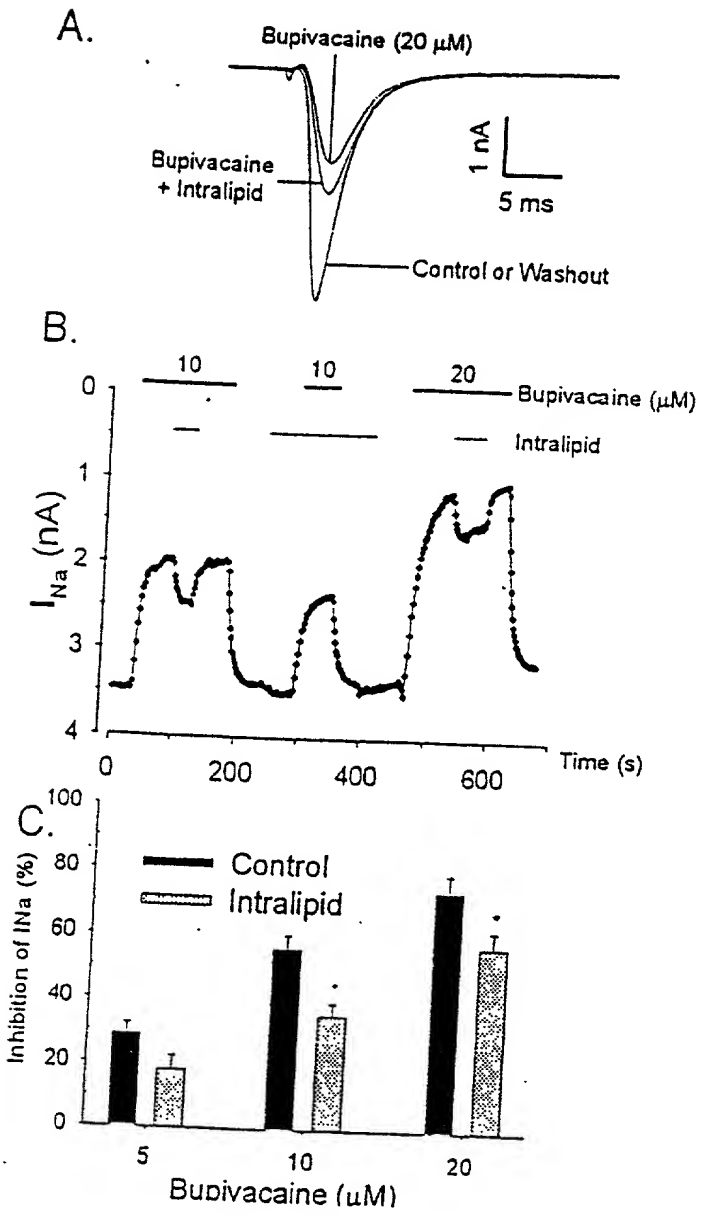

A.
Bupivacaine (20 μM)
Bupivacaine
+ Intralipid
1 nA
5 ms
Control or Washout
B.
10
10
20
Bupivacaine (μM)
Intralipid
$I_{Na}$ (nA)
0
1
2
3
4
0
200
400
600
Time (s)
C.
Control
Intralipid
Inhibition of INa (%)
100
80
60
40
20
0
5
10
20
Bupivacaine (μM)

FIGURE 7.

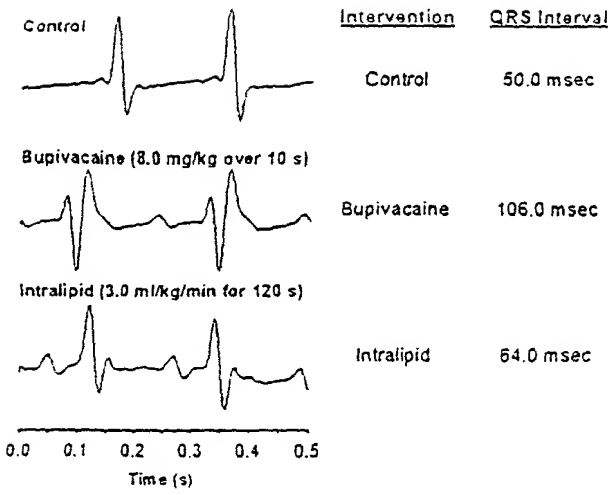

Control
Bupivacaine (8.0 mg/kg over 10 s)
Intralipid (3.0 ml/kg/min for 120 s)
0.0
0.1
0.2
0.3
0.4
0.5
Time (s)
Intervention
QRS Interval
Control
50.0 msec
Bupivacaine
106.0 msec
Intralipid
64.0 msec

FIGURE 9.